

REMARKS

A new set of claims is presented herewith. These claims are all patentably distinguishable from the cited prior art.

The salient distinguishing features of the presently claimed invention relative to the applied prior art are as follows.

In the claimed method, small amounts of electrolytic solution and, for emulsification purpose, surfactant are received in a reaction vessel also provided with an electrode such that the electrode does not contact the electrolytic solution, and a substance, for example carbon dioxide, is introduced into the reaction vessel in a subcritical state. Only thereafter is this substance shifted into a supercritical or other state in which the substance, the electrolytic solution and the surfactant form an emulsion, whereupon an electrochemical reaction is executed. By this procedure, an electrochemical reaction takes place in the presence of small amounts of electrolytic solution and surfactant. Consumption of electrolytic solution and surfactant is thereby reduced. Also, the amount of waste liquid produced is reduced, simplifying and reducing the cost of treatment thereof. Moreover, since the amounts of electrolytic liquid and surfactant introduced into the reaction vessel are small, they can be prevented from contacting a workpiece thereby to assure uniform plating.

The apparatus claims have similar recitations, namely, the reaction vessel is adapted to receive small amounts of electrolytic solution and surfactant and the apparatus is configured so that the electrolytic solution is received in the reaction vessel without contacting the electrode.

The references which have been applied are JP10-3211991 ("JP '991"), as sole or primary reference, and JP 2000-254405 ("JP '405"), JP 09-139374 ("JP '374"), JP 11-92990 ("JP '990") and JP 2-209729 ("JP '729") as secondary references.

In JP '991 the electrodes are always in contact with the electrolytic solution.

JP '405 relates to obtaining a surfactant which enables solubilization of a polar substance into a carbon dioxide medium. The issue of whether an electrode is in contact with an electrolytic solution before carbon dioxide is shifted to a supercritical state is not addressed.

JP '374 relates to washing and drying a microstructure by contacting it with a supercritical fluid in a pressure vessel and thereafter reducing the pressure to below the critical pressure to gasify and remove the fluid. Electrodes and electrolytic solutions are not discussed.

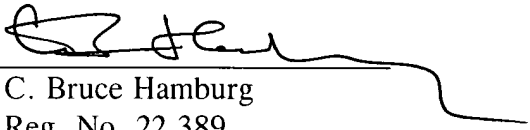
In JP '990 there is no disclosure of non-contact of electrodes with electrolytic solution prior to converting a substance to supercritical state.

JP '729 relates to the manufacture of a semiconductor device in which a

supercritical gas may be used to remove foreign substances. There is no disclosure relating to physical relationships between an electrode and an electrolytic solution.

It is, therefore, believed that all the present claims are in condition for allowance, and that action is earnestly solicited.

Respectfully submitted,
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